Biodiversity Scenarios

Methodological tools for developing biodiversity scenarios

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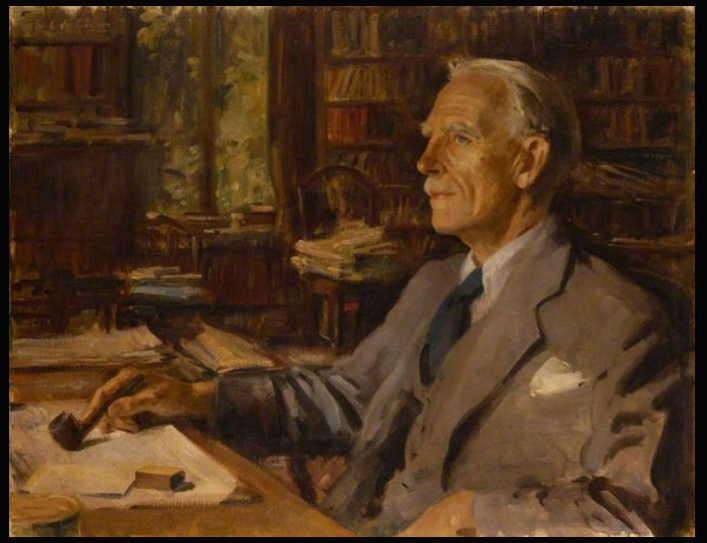
CIRAD / ETH Zürich – Mars 2013
Scénarios de Biodiversité – FRB Libreville

ATELIER RÉGIONAL /// REGIONAL WORKSHOP
SCÉNARIOS DE LA BIODIVERSITÉ AFRICAINE /// SCENARIOS OF BIODIVERSITY CHANGE IN AFRICA

25-27 MARS 2013 | LIBREVILLE - GABON | 25-27 MARCH 2013


A
B

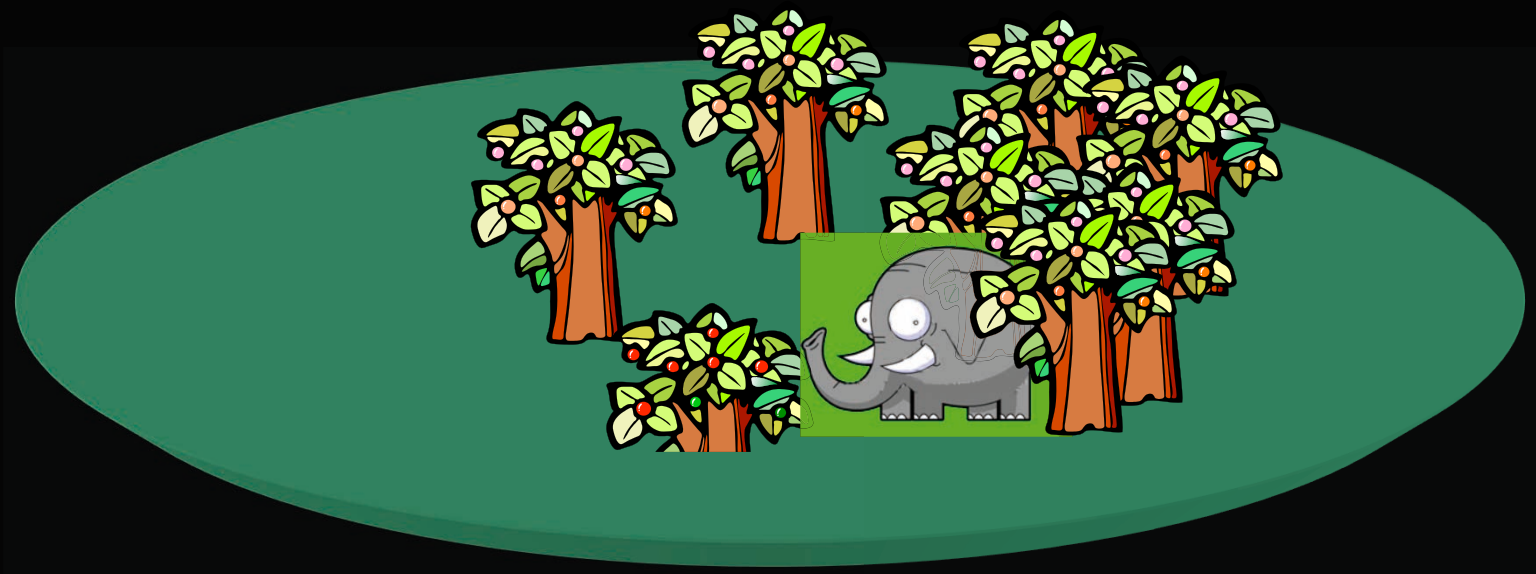
Ecosystem



- Sir A. Tansley 1935
- the whole system […], including not only the organism-complex, but also the whole complex of physical factors […].
- The method of science […] is to isolate systems mentally for the purposes of study […]. The isolation is partly artificial, but is the only possible way in which we can proceed.

Ecosystem

- Physical and biological systems
- Time and scale independent
- Intellectual construct



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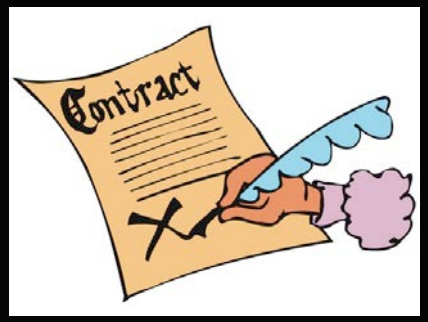
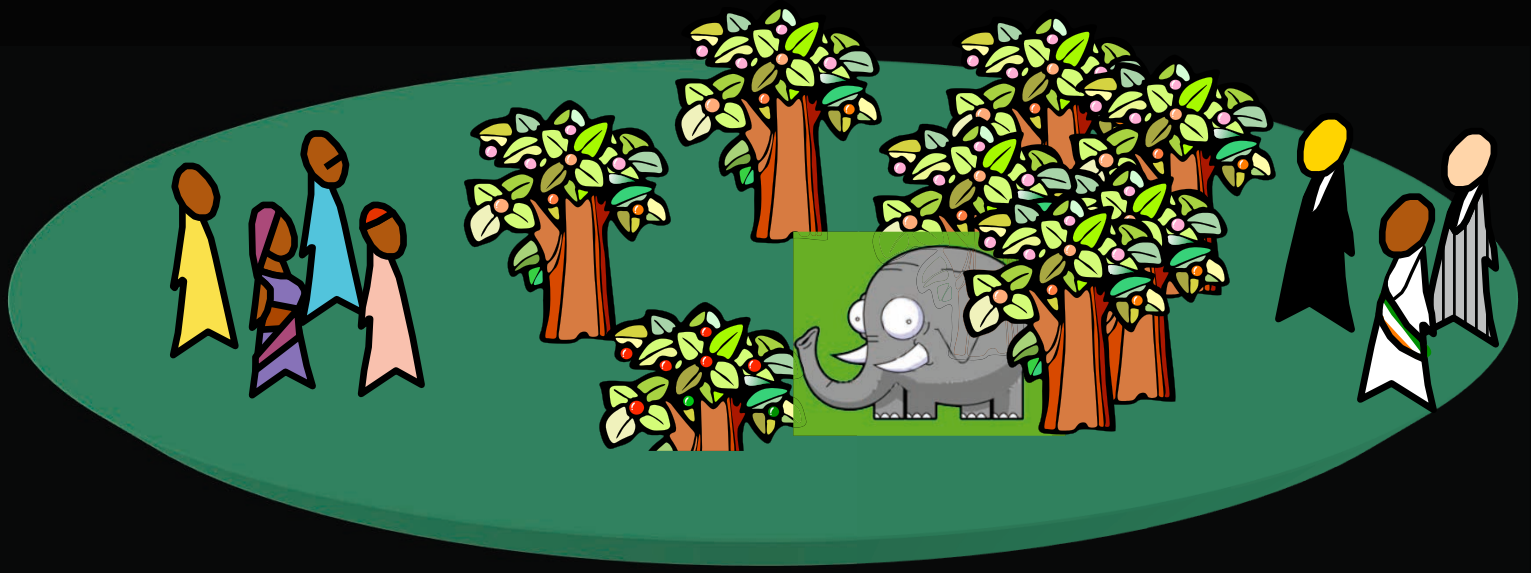
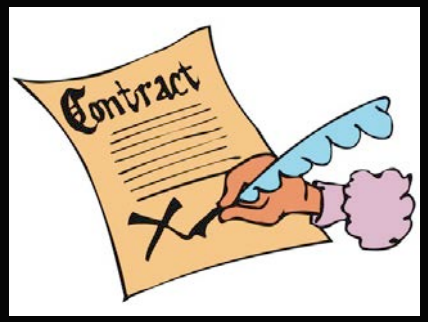
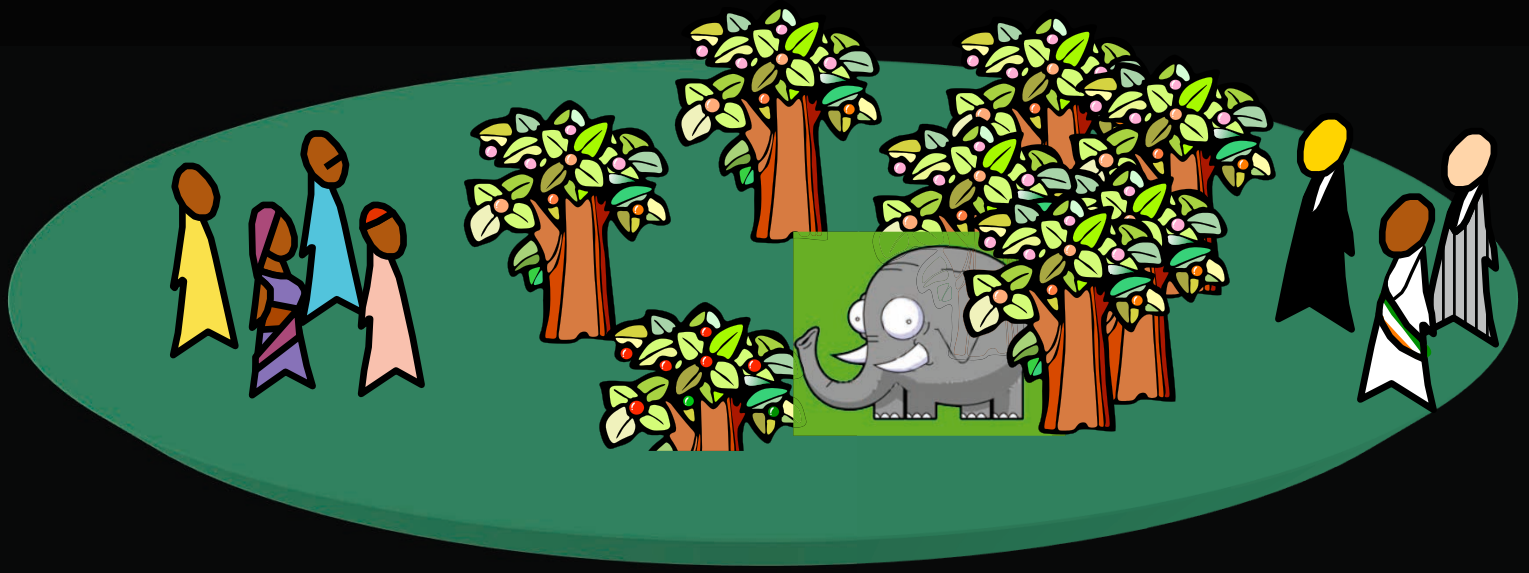




Social and Ecological Systems





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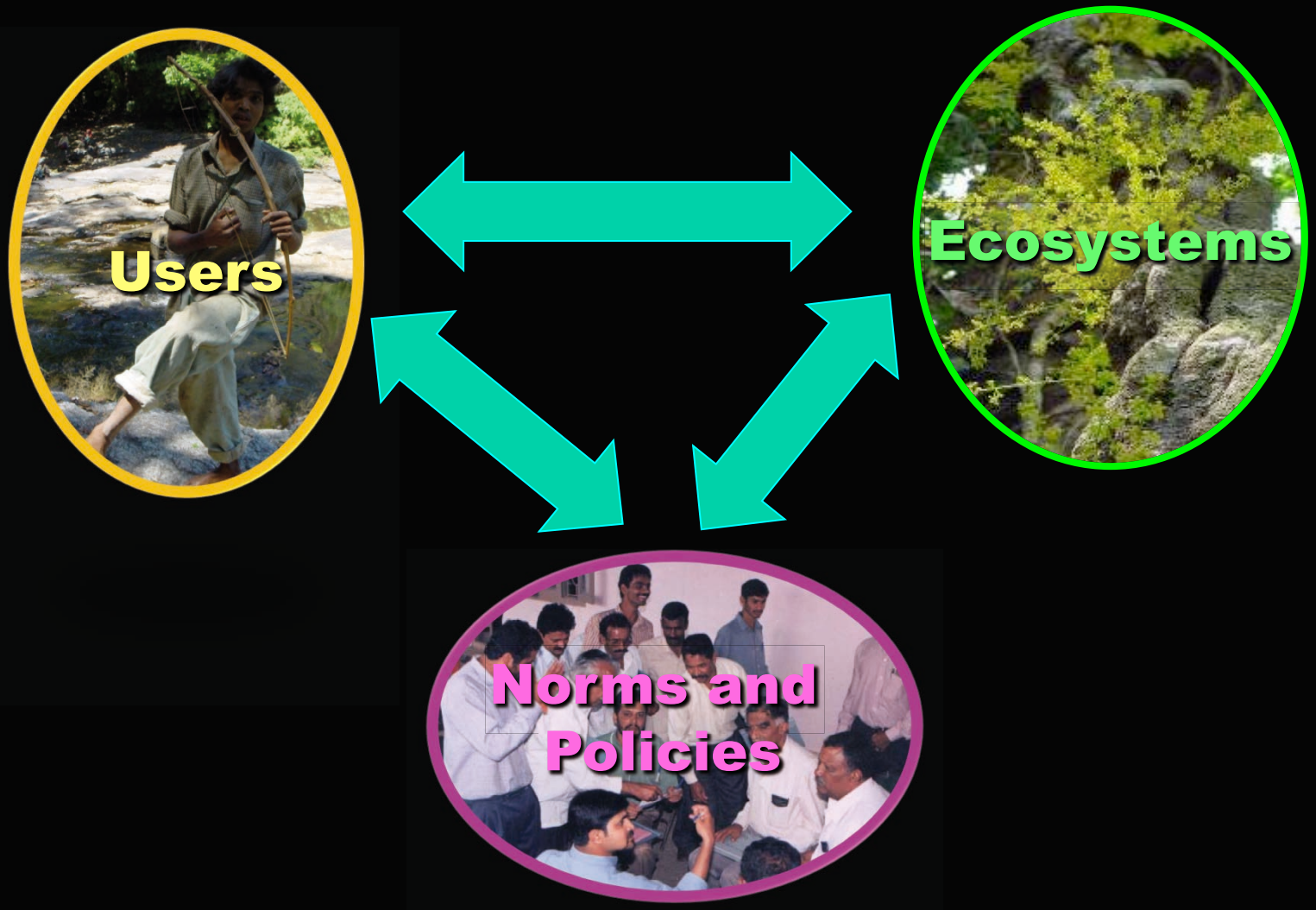

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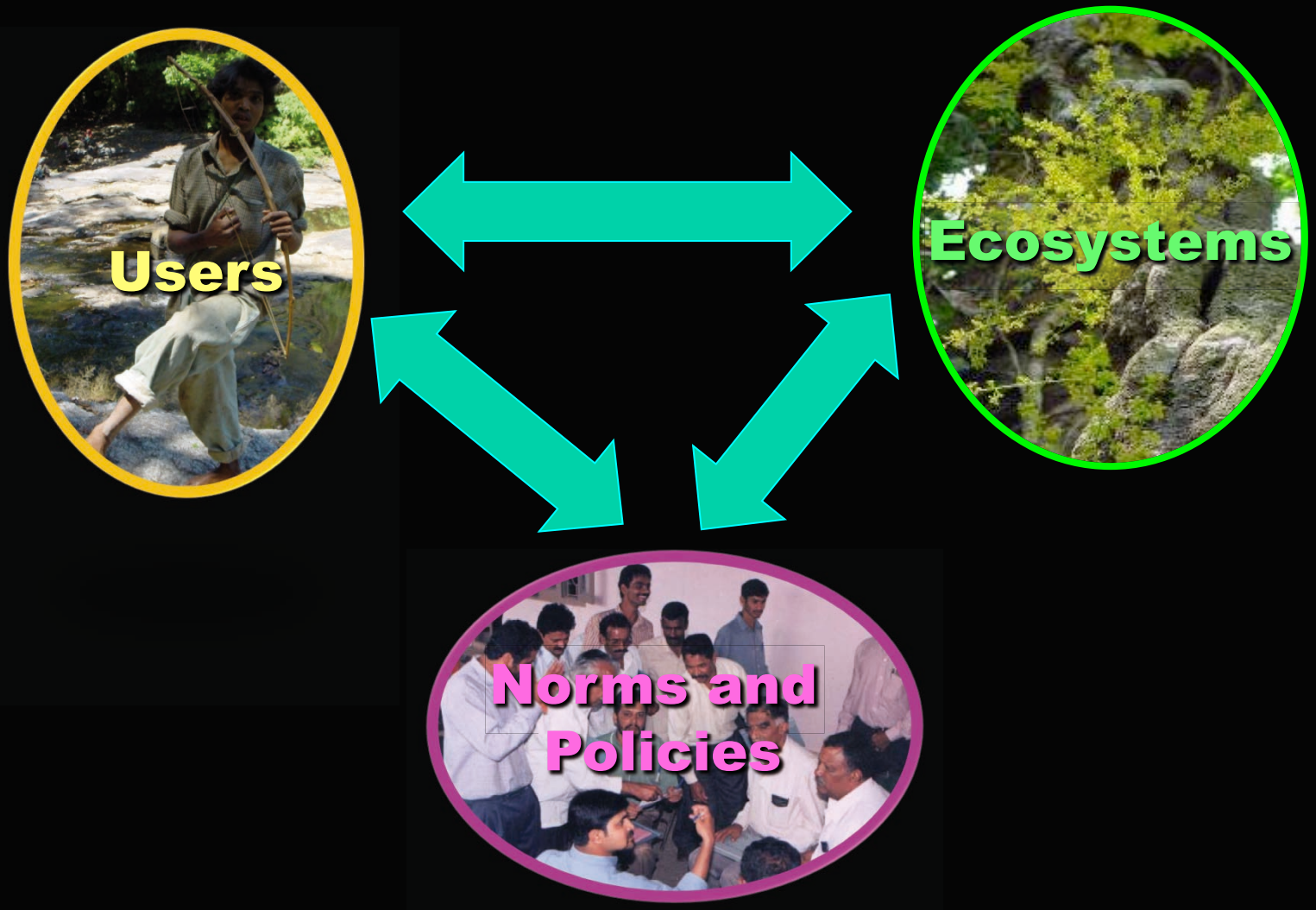

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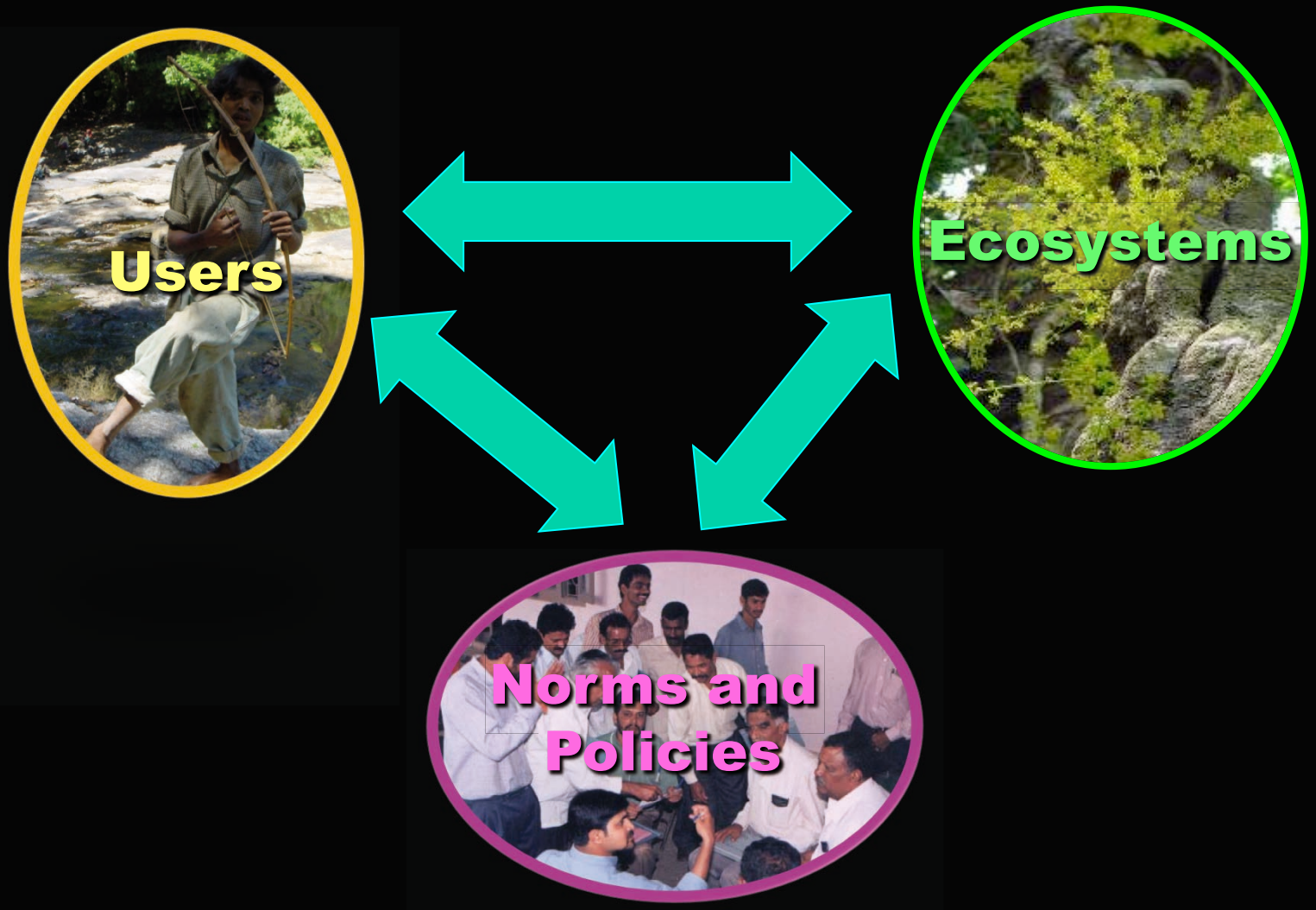


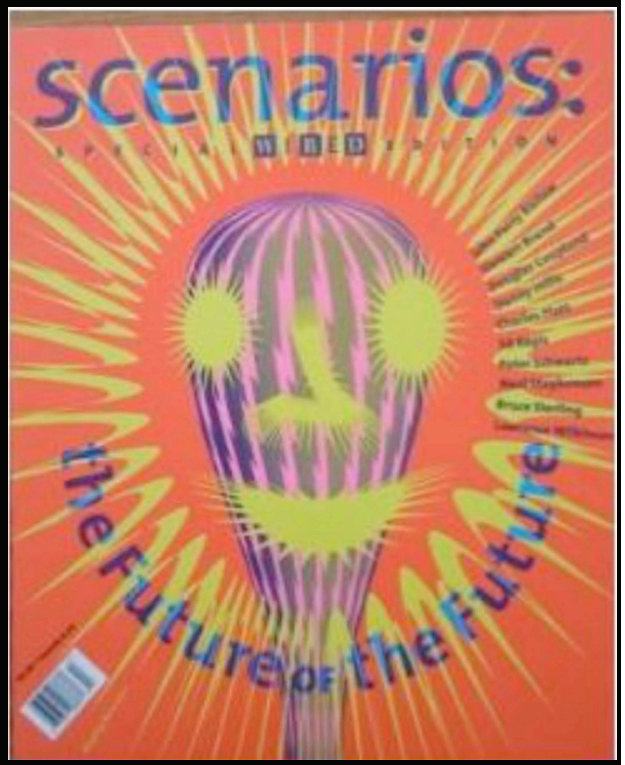
Probable and possible

"Il est important de penser au futur, parce que nous sommes condamnés à passer avec lui le reste de notre vie"
W. Allen

The probable
Predictions, forecasts and projections
futures that will be

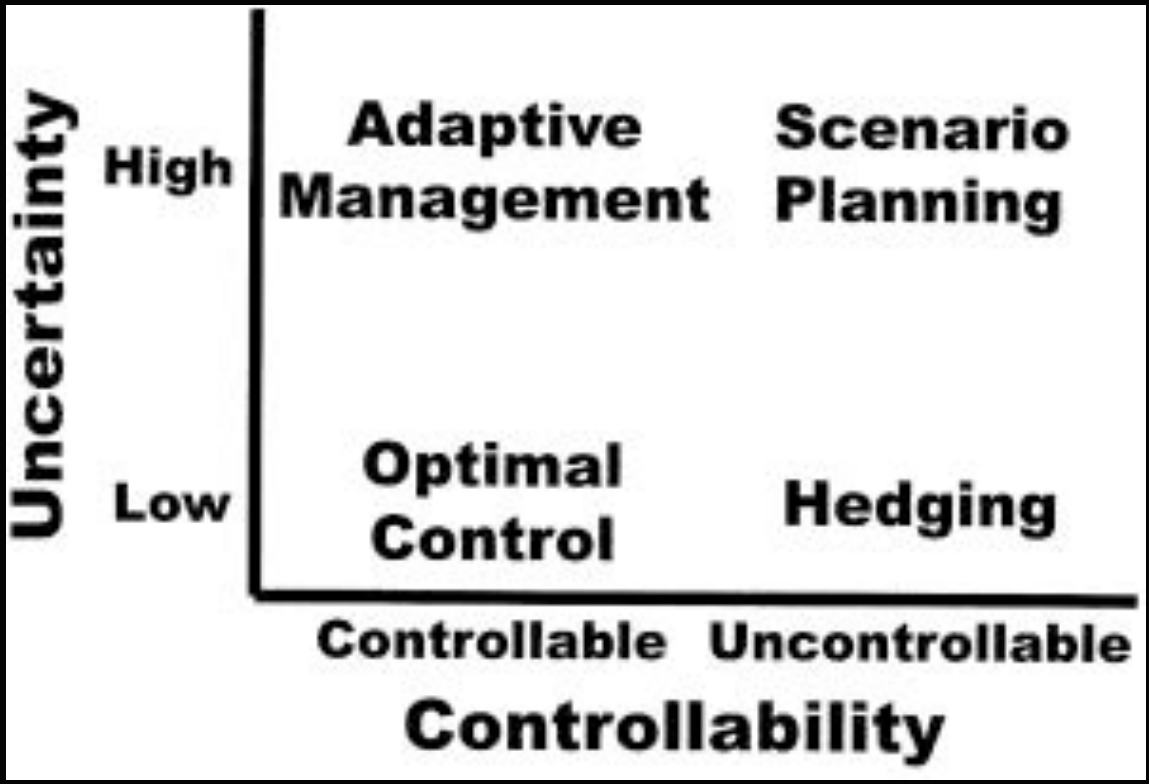
The possible
Scenarios
futures that could be

- The purpose of scenario planning is **not to pinpoint future events** but to highlight large-scale forces that push the future in different directions.
- It's about making these forces visible
- It's about helping make better decisions today.



http://www.wired.com/wired/scenarios/build.html

Scenario Planning: a Tool for Conservation in an Uncertain World



Peterson et al. 2003 Conservation Biology.

Why scenario planning?

Major benefits are :

1. Increased understanding of key uncertainties,
2. Incorporation of alternative perspectives into conservation planning,
3. greater resilience of decisions to surprise.

Peterson et al., 2003

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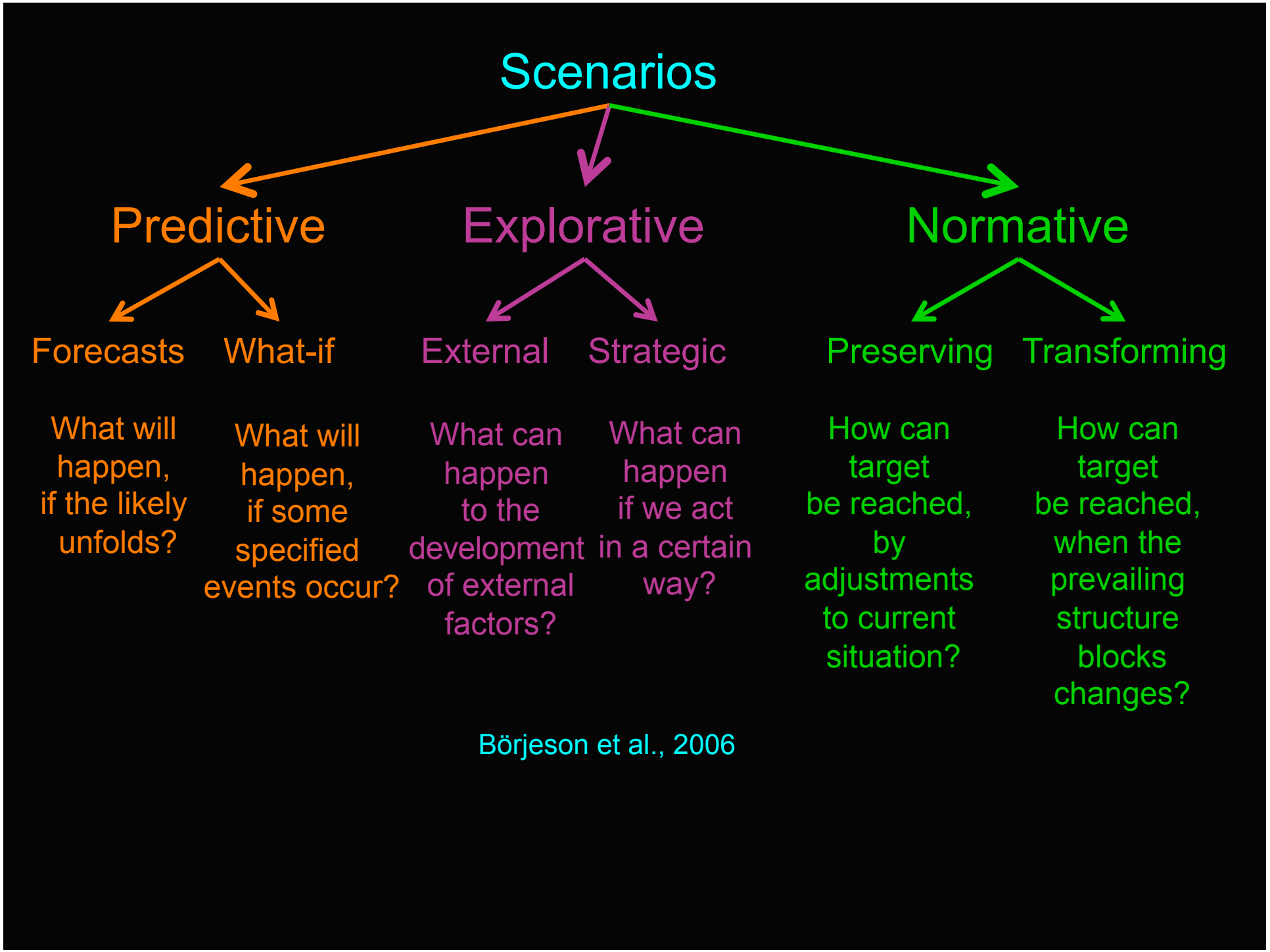
Scenario?

- A possible situation
- Business as usual

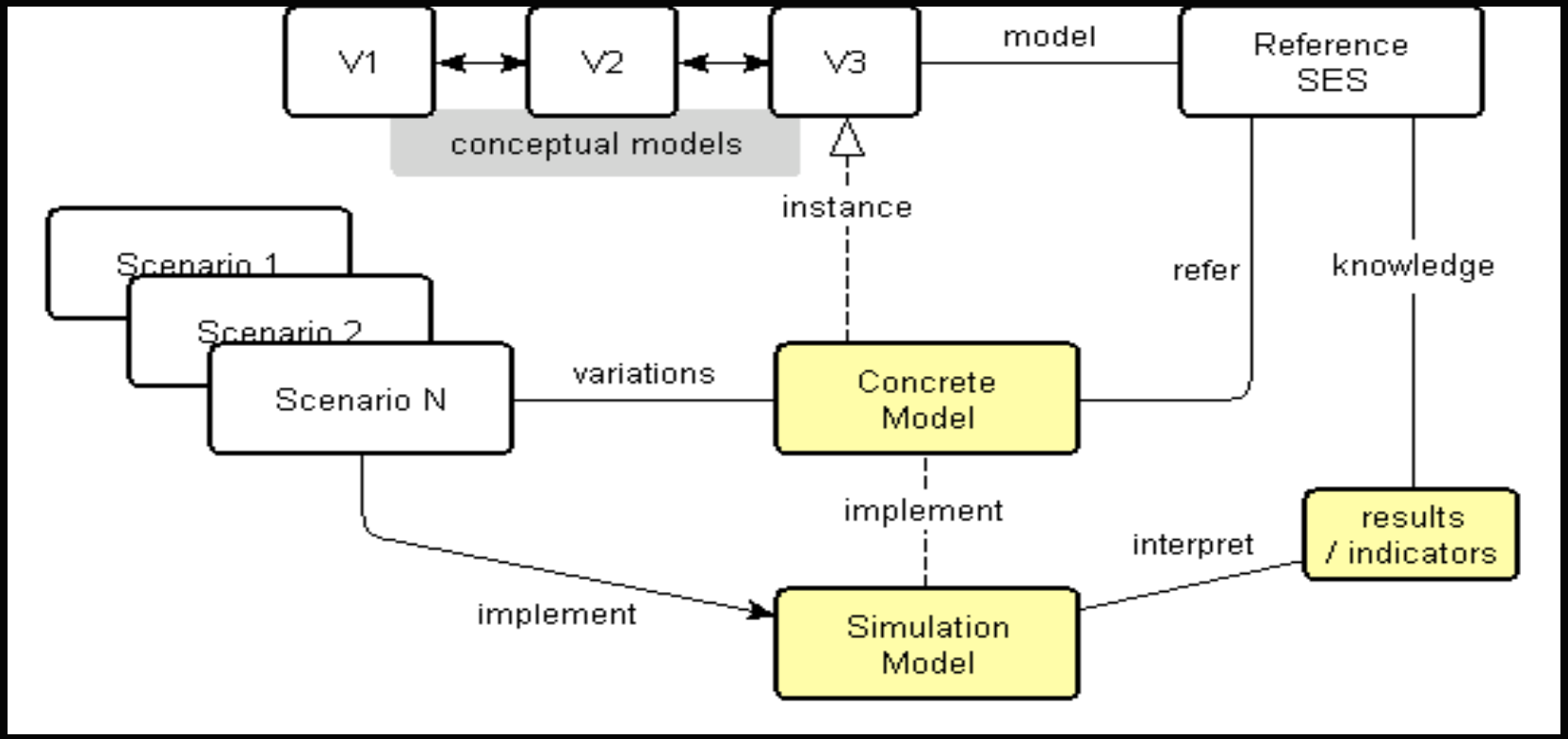
- Provocative alternative stories
- Key elements of uncertainty

- What will happen?
- What can happen?
- How do we get there?

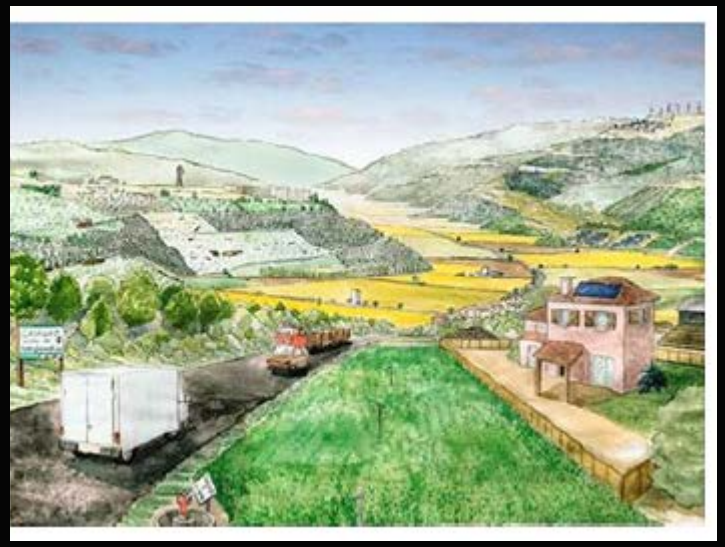

Scenarios
Predictive
Explorative
Normative
Forecasts
What-if
External
Strategic
Preserving
Transforming
What will happen, if the likely unfolds?
What will happen, if some specified events occur?
What can happen to the development of external factors?
What can happen if we act in a certain way?
How can target be reached, by adjustments to current situation?
How can target be reached, when the prevailing structure blocks changes?
Börjeson et al., 2006

Models and « scenarios »

In the context of systems modelling, a *scenario* refers to a set of assumptions about the extrinsic drivers, parameters, and structure of the model

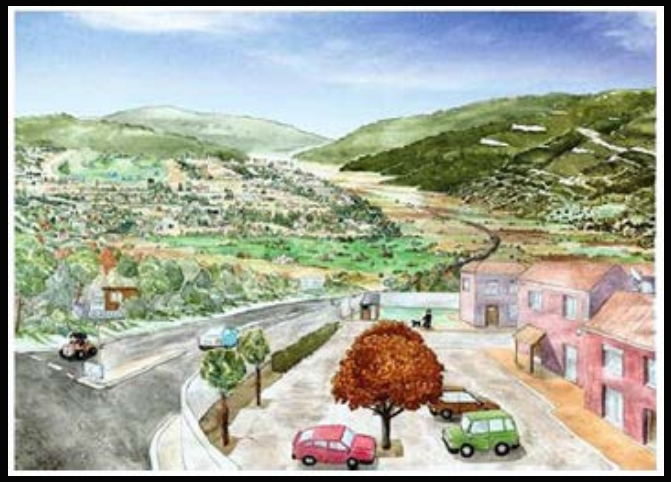


Visualising – Artists impressions



Guarrigue after the energy crisis

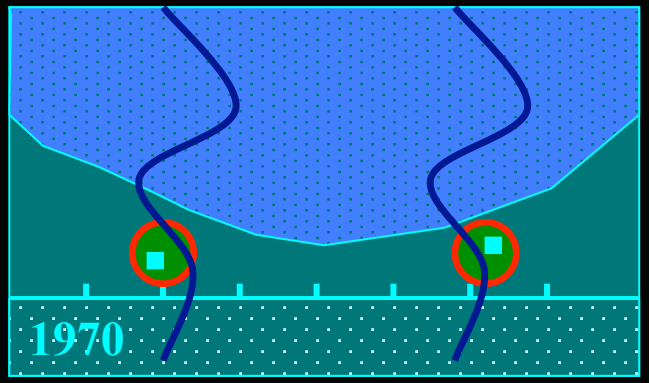
A green city in
a Mediterranean forest

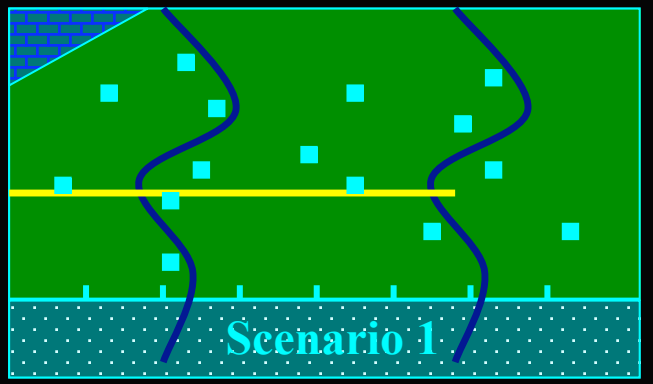


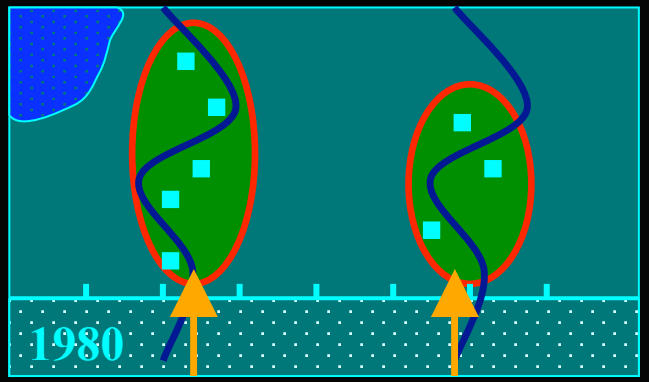
Urban pressure

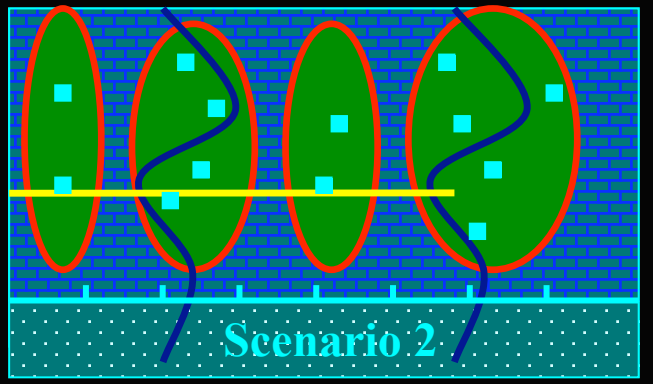
Griffon et al, 2011

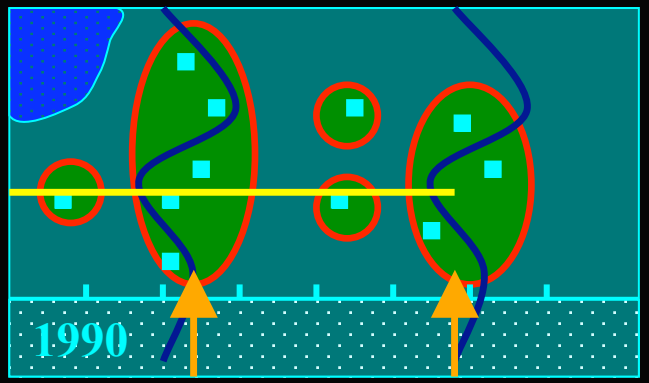
Visualising - Graphic models

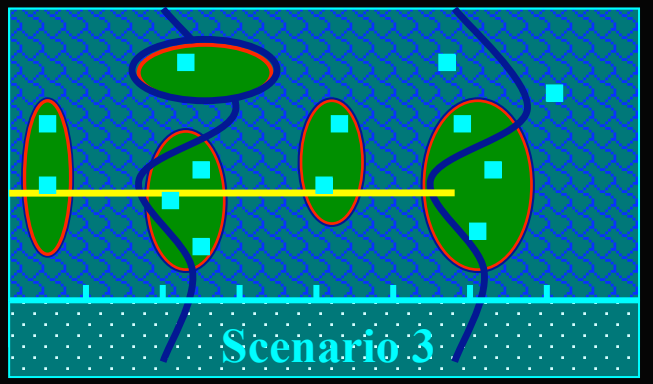




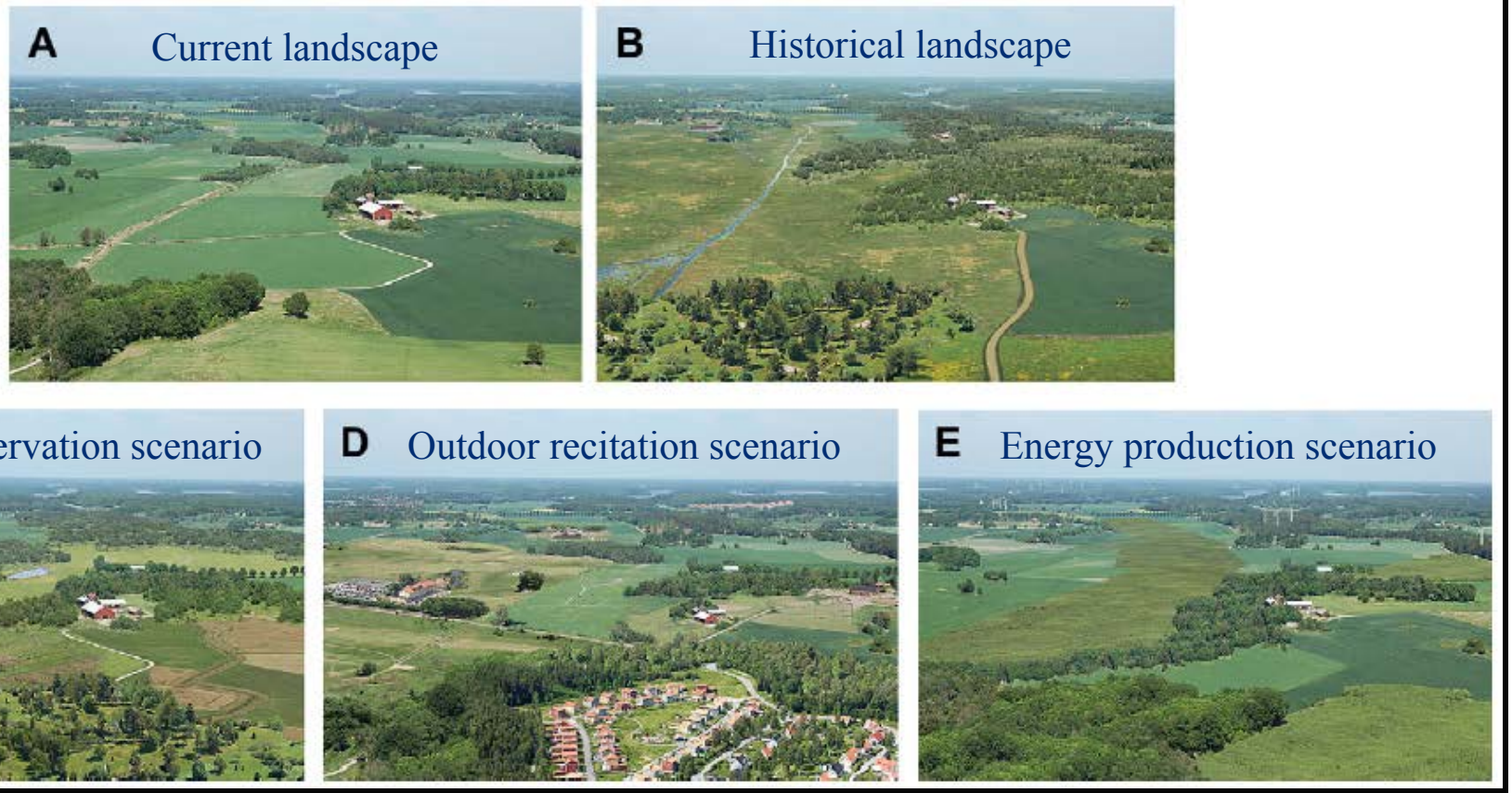








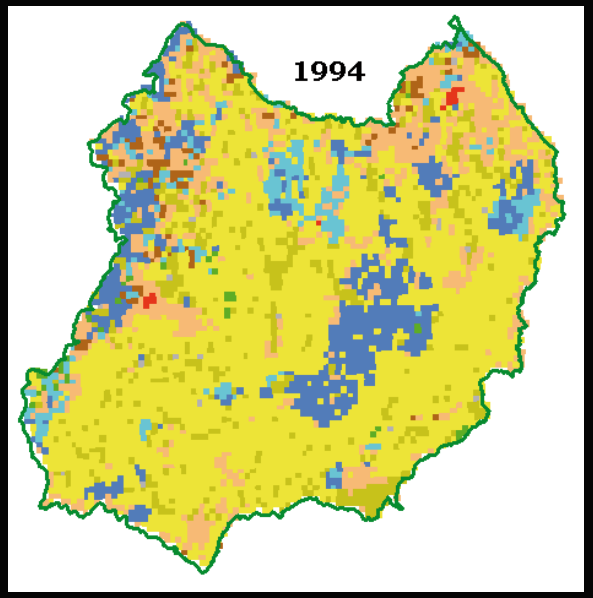
Visualising - Photoshop



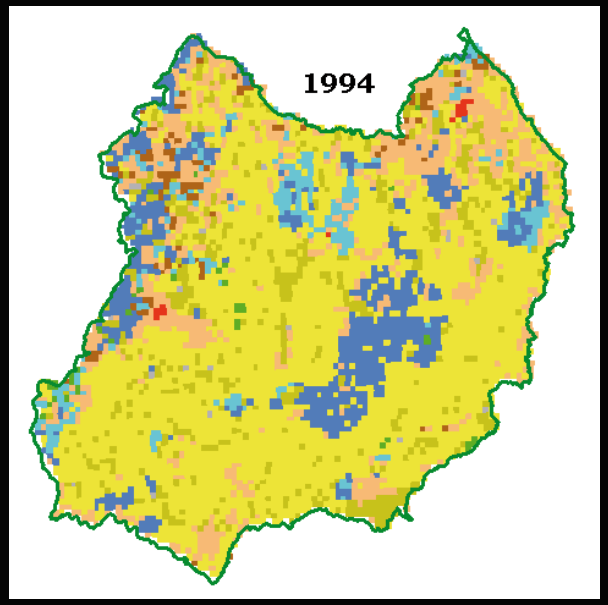
Lindborg et al., 2009

Visualising - Computer simulation model

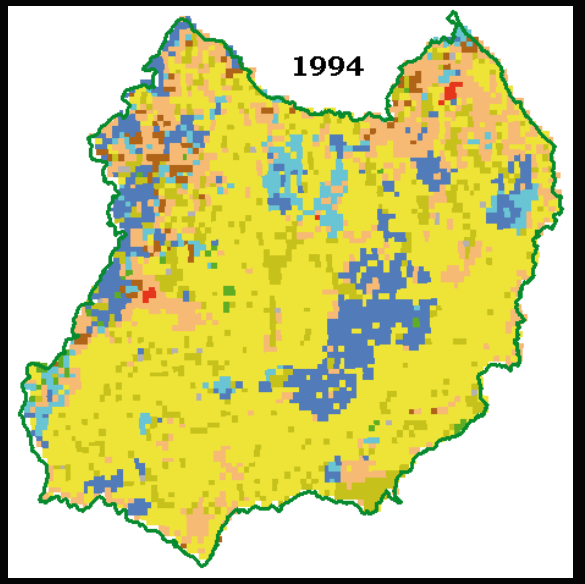
Let Nature work



Cooperation between farmers and National Park



Back to grassland



Etienne et al., 2003

Scenario development

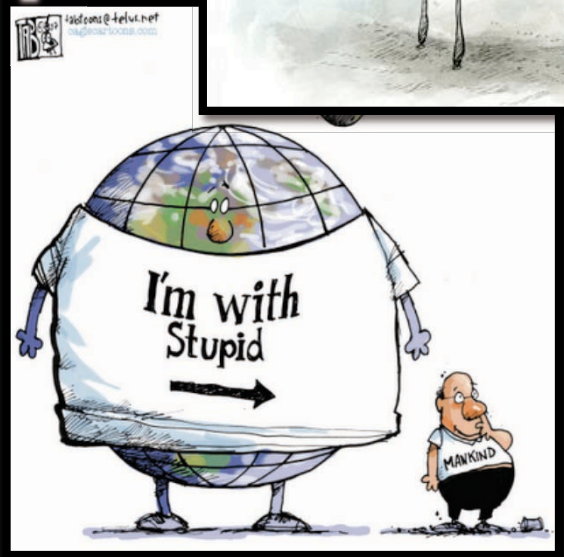
1. Identification of a focal issue
2. Assessment
3. Identification of alternatives
4. Building scenarios
5. Testing scenarios
6. Policy screening

Peterson et al., 2003

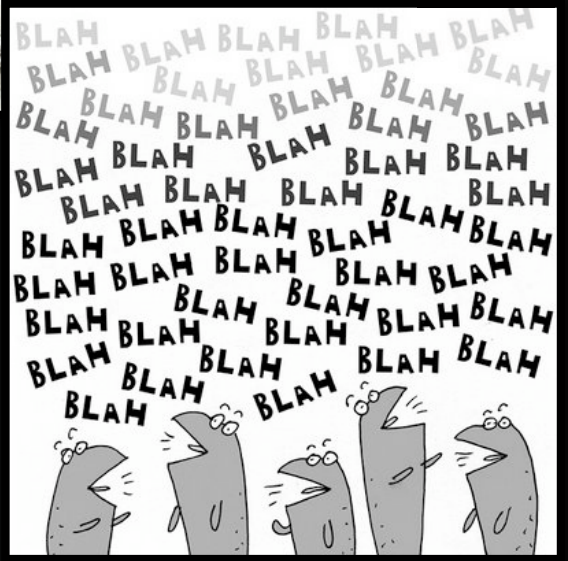
3


RESEARCH CONCLUDES:
WE ARE DESTROYING EARTH.
COULD YOU KINDLY REPHRASE THAT IN EQUIVOCAL, INACCURATE, VAGUE, SELF-SERVING AND ROUNDABOUT TERMS THAT WE CAN ALL UNDERSTAND?
GOVERNMENT

1


I'm with Stupid
MANKIND

2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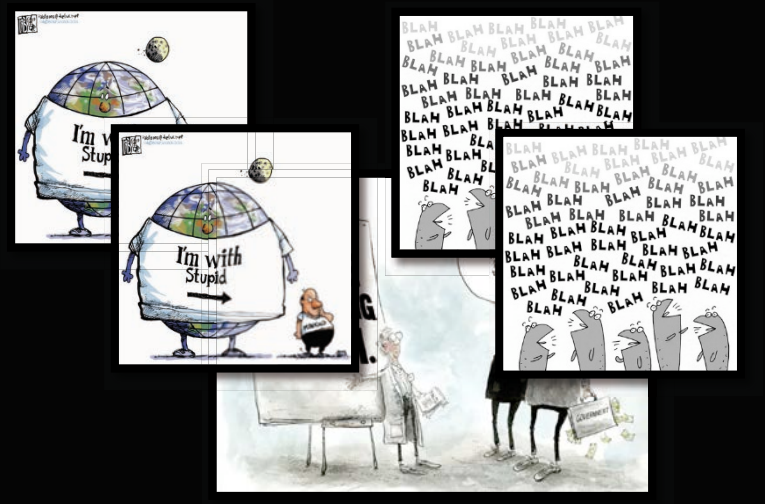
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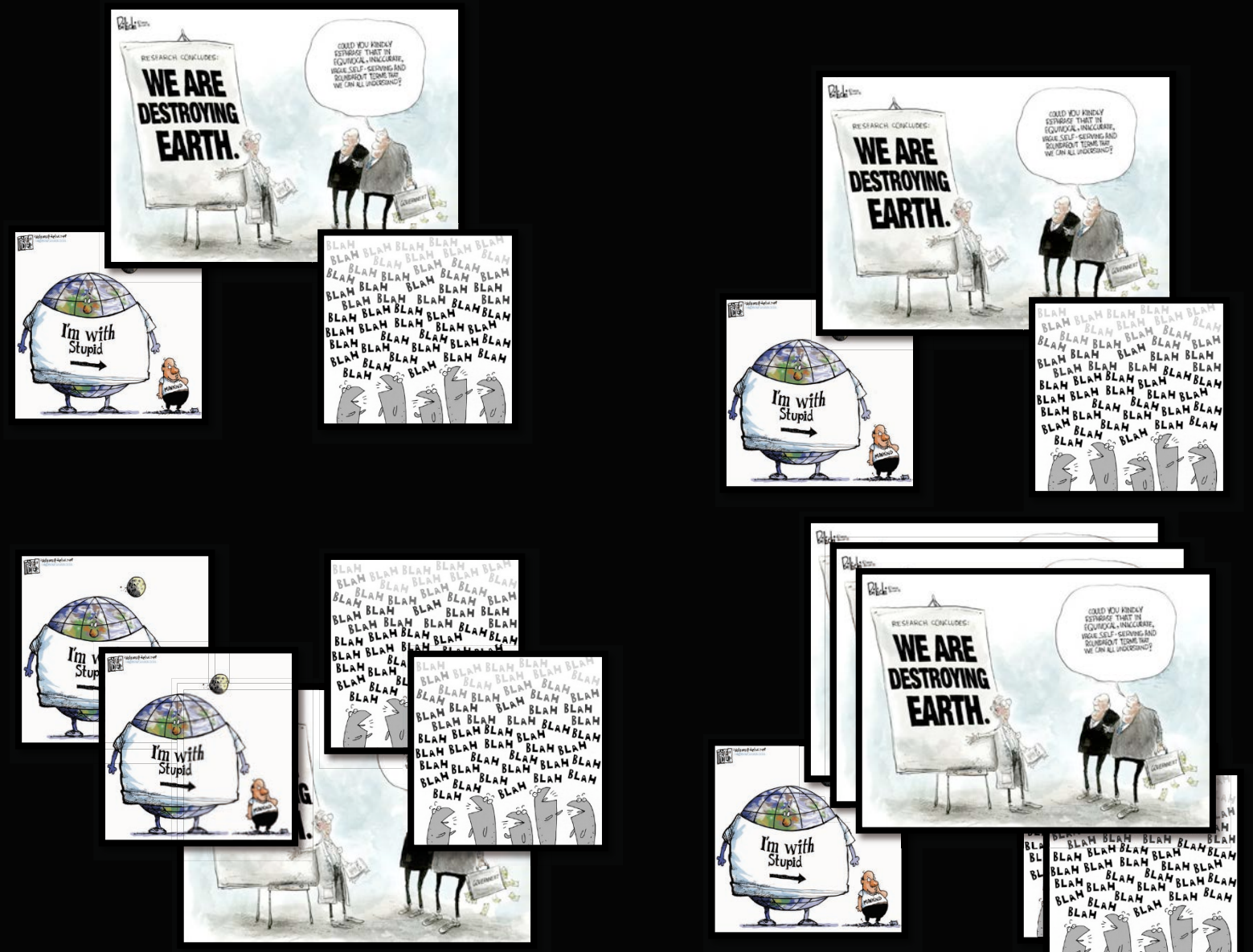
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GOVERNMENT
I'm with Stupid
BLAH

3


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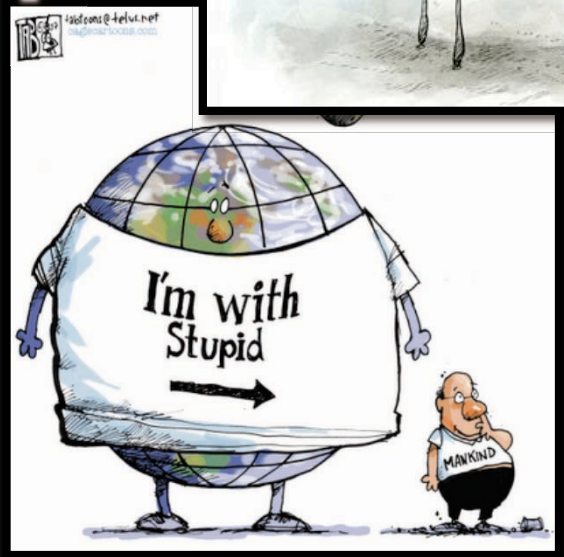
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MANKIND

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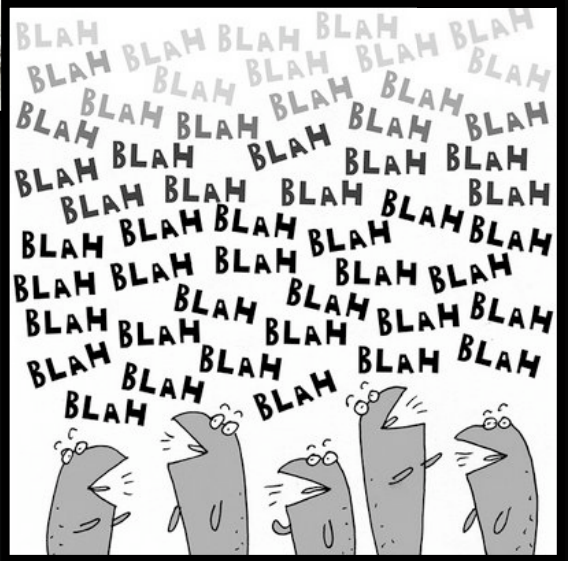
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POUR LE DÉVELOPPEMENT

IIASA Conference '07
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CoForTip

Congo basin Forests: Tipping points

for biodiversity conservation and resilience
of forested social and ecological systems

Project Structure

CoForTips